

Department of Health

A Spatial Analysis of Low-Income Communities in Pensacola, FL to Determine Areas of Need in Relation to the Availability of Fresh Food and Transportation



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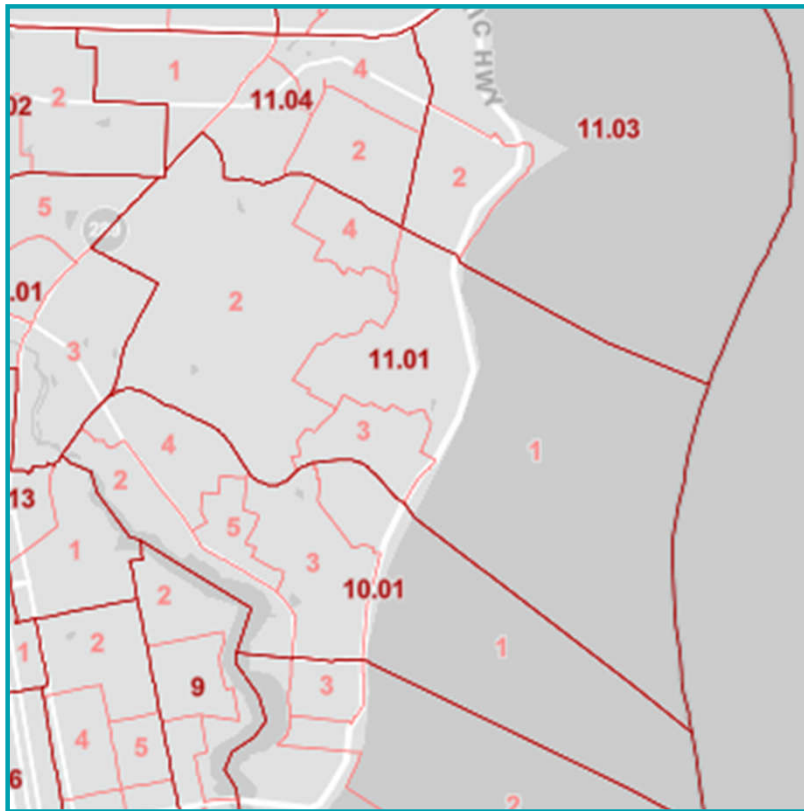
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Date: 08/06/2020

Project Year: 2019/2020

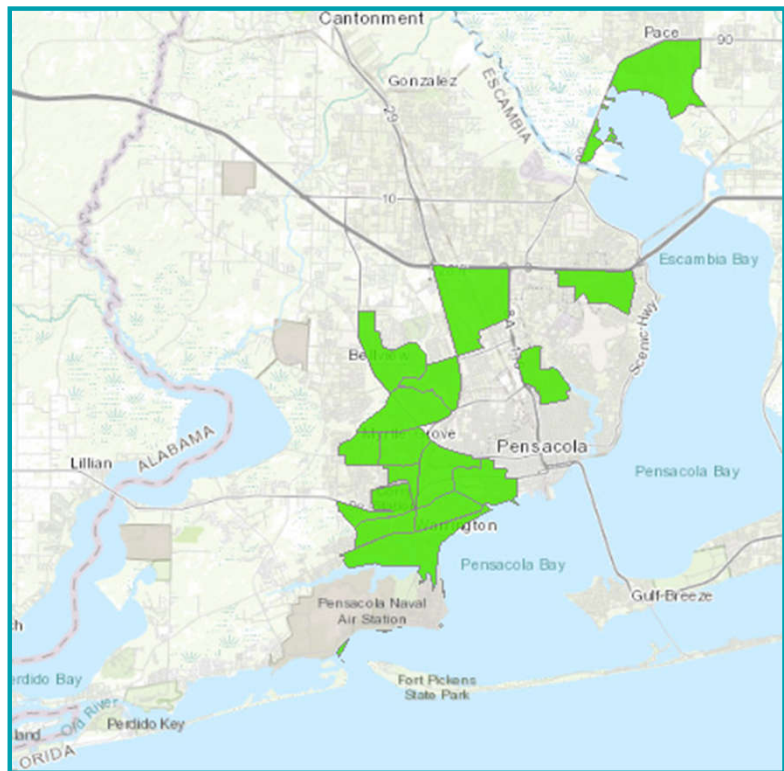
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Defining Census Data Geographies



- Census Tract
 - Statistical subdivisions of a county
 - Population size between 1,200 and 8,000 people
 - Optimum size is 4,000 people
 - 11.01 is a census tract
- Census Block Group
 - Statistical subdivisions of a census tract
 - Population size between 600 and 3,000 people
 - 4 divisions of 11.01 are census block group

USDA's Food Access Research Atlas



- According to the Food Research Atlas there are low income communities in the Pensacola area that may have trouble getting to stores that sell fresh food items
- The Atlas provides a spatial overview of food access for low income communities
 - Census data is used to determine income status
 - Urban residents that are more than 1 mile away from the nearest supermarket are considered to have low food access
- The light green areas are census tracts that were determined to have low food access

Why is Food Access Important?

- Americans are not consuming the recommended servings of fresh fruits and vegetables, which could impact their health
- Some possible reasons may be price, a lack of time, and not having stores nearby that sell fresh fruits and vegetables
- If an individual and/or family has trouble getting to a grocery store they may choose to get food items from convenience stores
- Most of the items found in convenience stores are not healthy (sodas, candy, pastries, and chips) and are contributing to the obesity problem in America



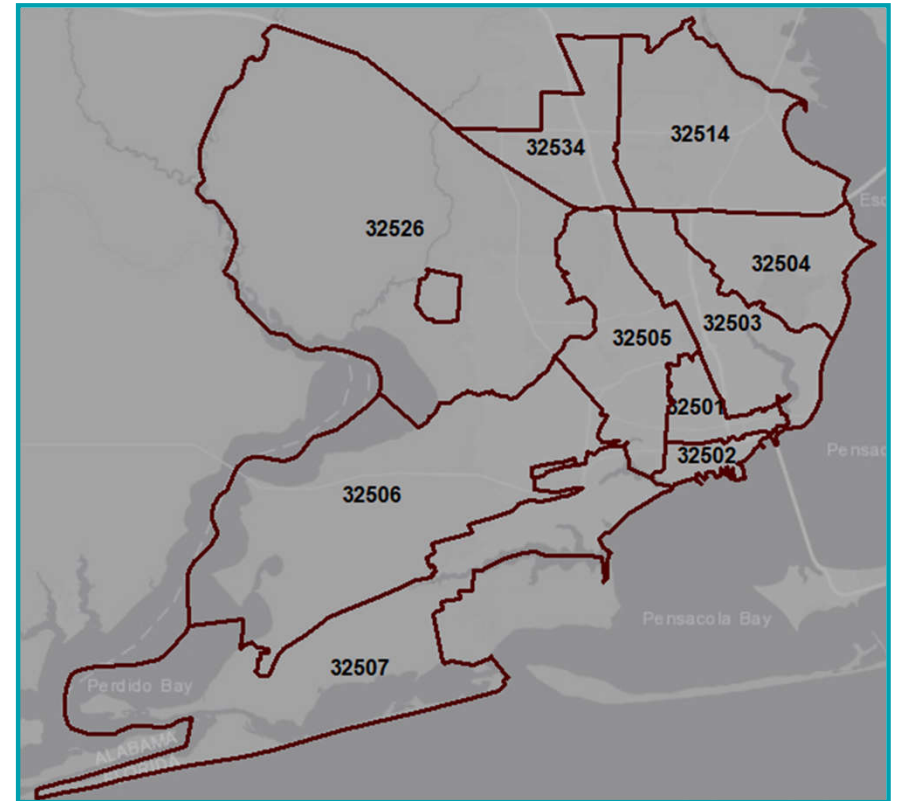
Research Questions

1. Do outside factors such as bus routes and smaller local grocery stores impact the status of those census tracts with limited access to food retailers?
2. What are the health implications associated with having limited access to food retailers?



Study Area

- 10 zip codes of Pensacola, FL
- Military bases were excluded
- Comprised of 63 census tracts
- Population of 275,402
- Median Age of 38
- 21% of population under 18 years in age
- 16% of population 65 years or older



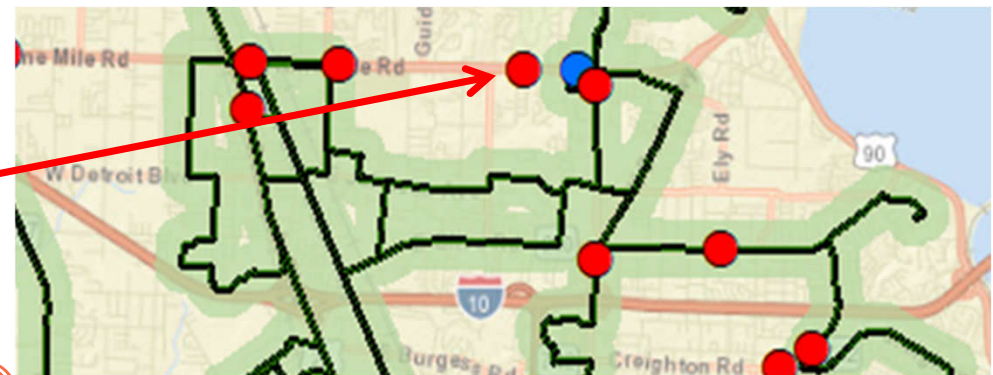
Identifying Food Retailers

- Data obtained from the Florida Department of Agriculture and Consumer Sciences inspection reports
- This study classified stores in three different ways
 1. Store type
 - Grocery Store (Publix, Winn-Dixie, Walmart)
 - Market (Bailey Produce, The Butcher Shoppe)
 - Minor Food Outlets (Dollar General, Dollar Tree)
 - Convenience Stores (Circle K Mart, Tom Thumb)
 - Bakeries/Coffee Shops/Sweet Shops (Drowsy Poet Coffee Shop, Flowers Foods)
 2. Fresh food retailer – offer 6 or more fresh or flash frozen fruits or vegetables
 3. Participation in food assistance programs
 1. Supplemental Nutrition Assistance Program (SNAP)
 2. Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

Identifying Public Transportation

- Data obtained from Escambia County Area Transit (ECAT) website
- Mapping software allowed researchers to identify all food retail establishments that were within a $\frac{1}{4}$ mile of an ECAT bus route
- $\frac{1}{4}$ mile was based off the ECAT 10-year transit development plan as an acceptable distance to travel for public transportation

Point does not fall within the light green outline which indicates $\frac{1}{4}$ mile distance from bus route



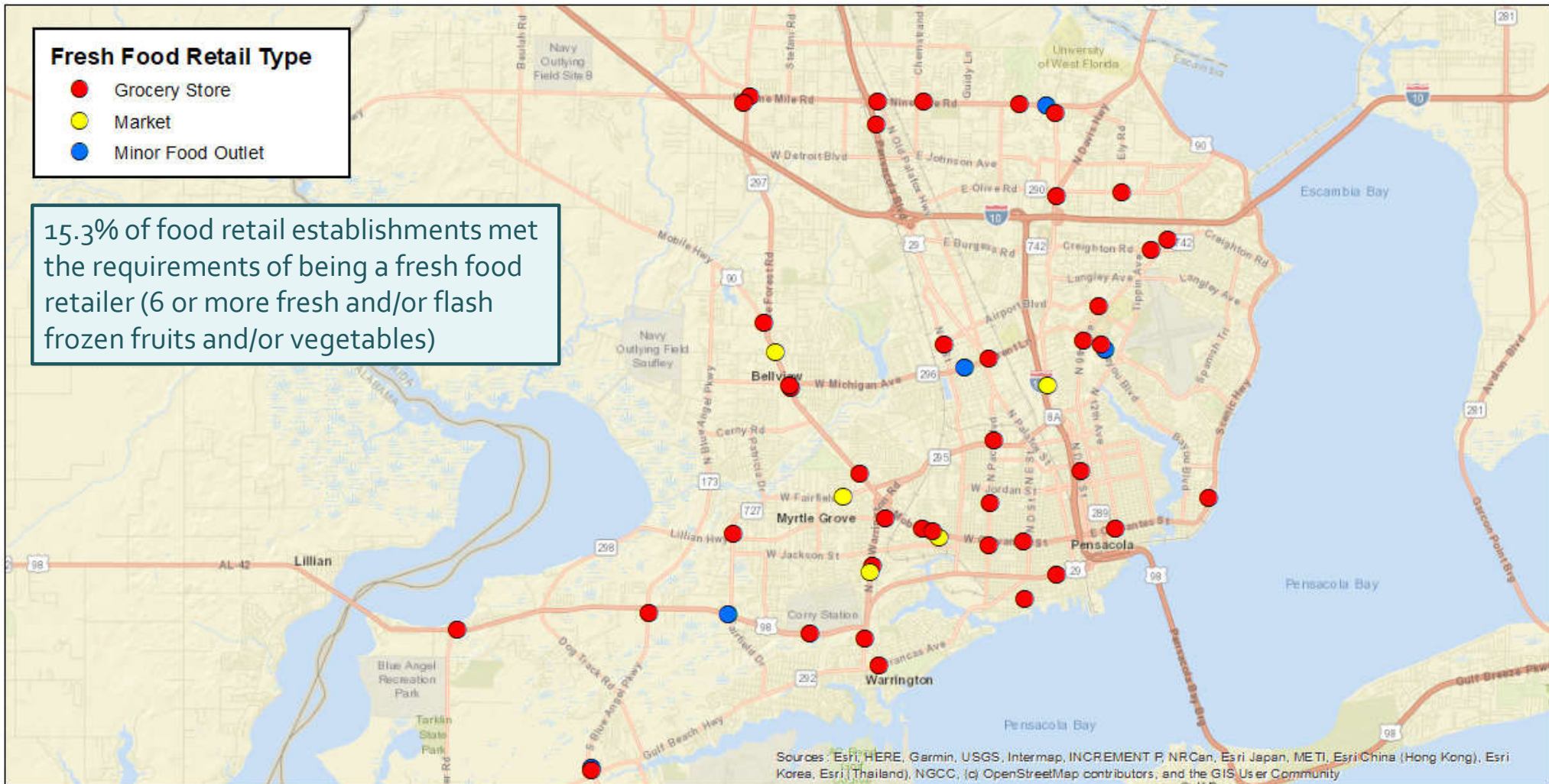
Determining Poverty Status

- Used data from the 2017 American Community Survey conducted by the US Census Bureau
- Poverty status
 - Census tract with a poverty rate of 20% or higher
 - Census tract with a median family income less than 80% for the metro area (Escambia County median income \$36,382)
- Borderline poverty status
 - Census tract poverty rate between 20% and 23%
 - Census tract with a median family income within \$3,000 of the poverty cut off (median income between 36,383 and 39,382)

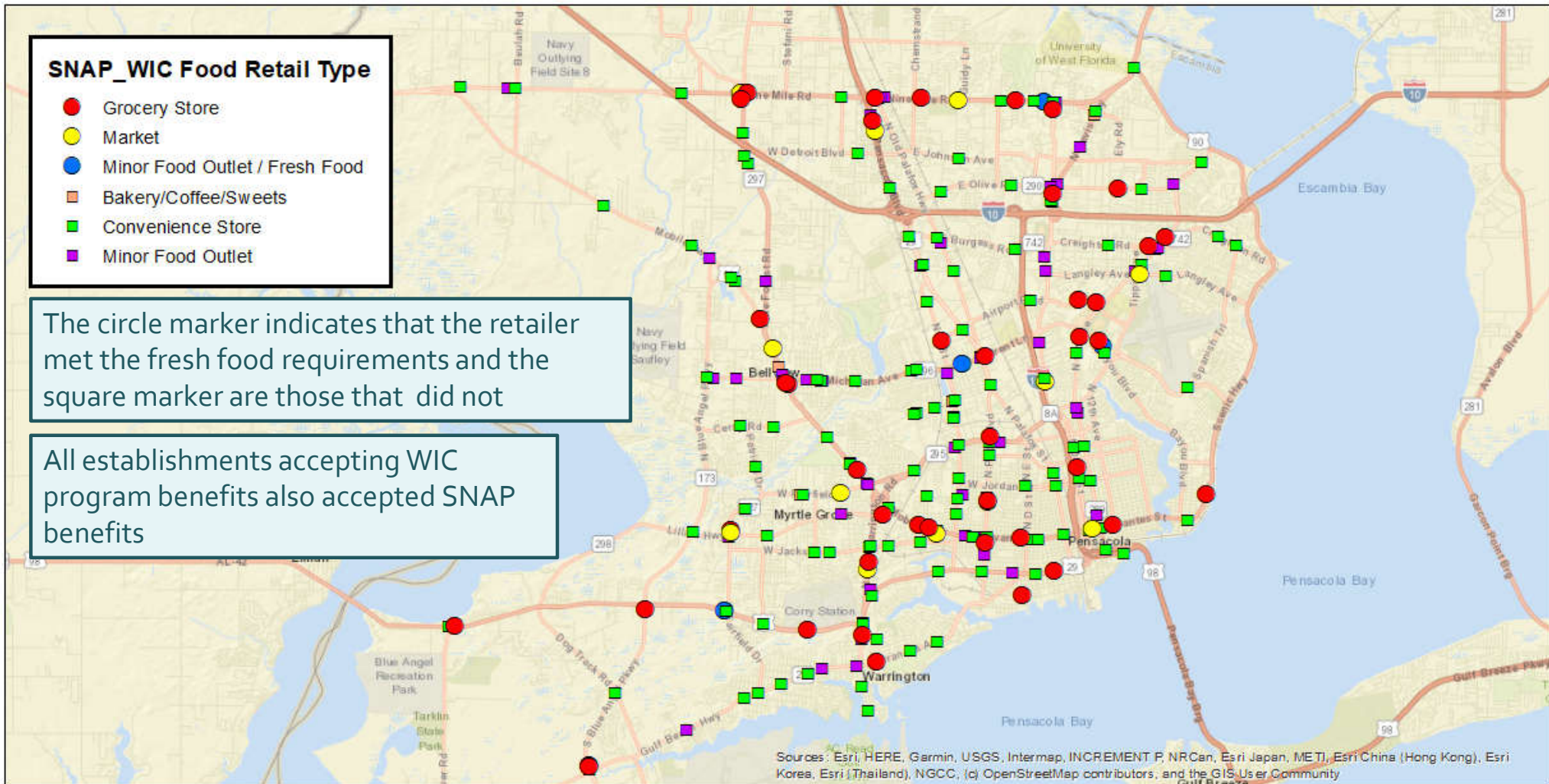
Results: Food Retail Establishments

- 353 food retail establishments were identified in the study area
 - Most of the retail establishments were convenience stores (51.8%) and minor food outlets (22%)
 - 12.2% of retailers were grocery stores
- 263 food retail establishments (74.5%) participated in the Supplemental Nutrition Assistance Program (SNAP)
 - Most retailers were convenience stores (49.1%) and minor food outlets (26.6%)
 - 16.3% of retailers were grocery stores
- 32 food retail establishments (9%) participated in Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
 - 90.6% of retailers were grocery stores
 - All establishments accepting WIC program benefits also accepted SNAP benefits

Fresh Food Retailers in the Pensacola, FL Study Area



SNAP/WIC Approved Retailers in the Pensacola, FL Study Area

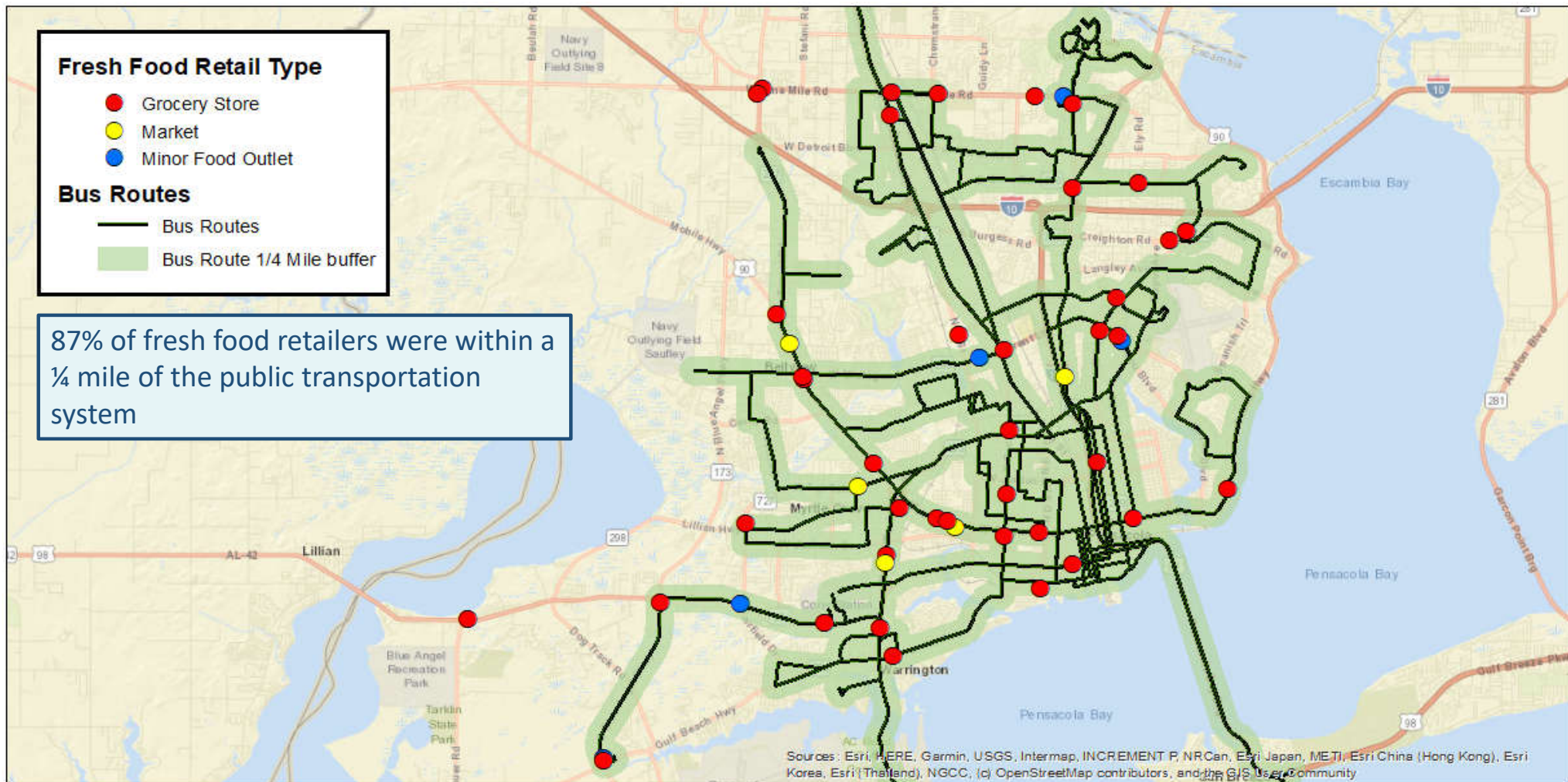


Results: Public Transportation System

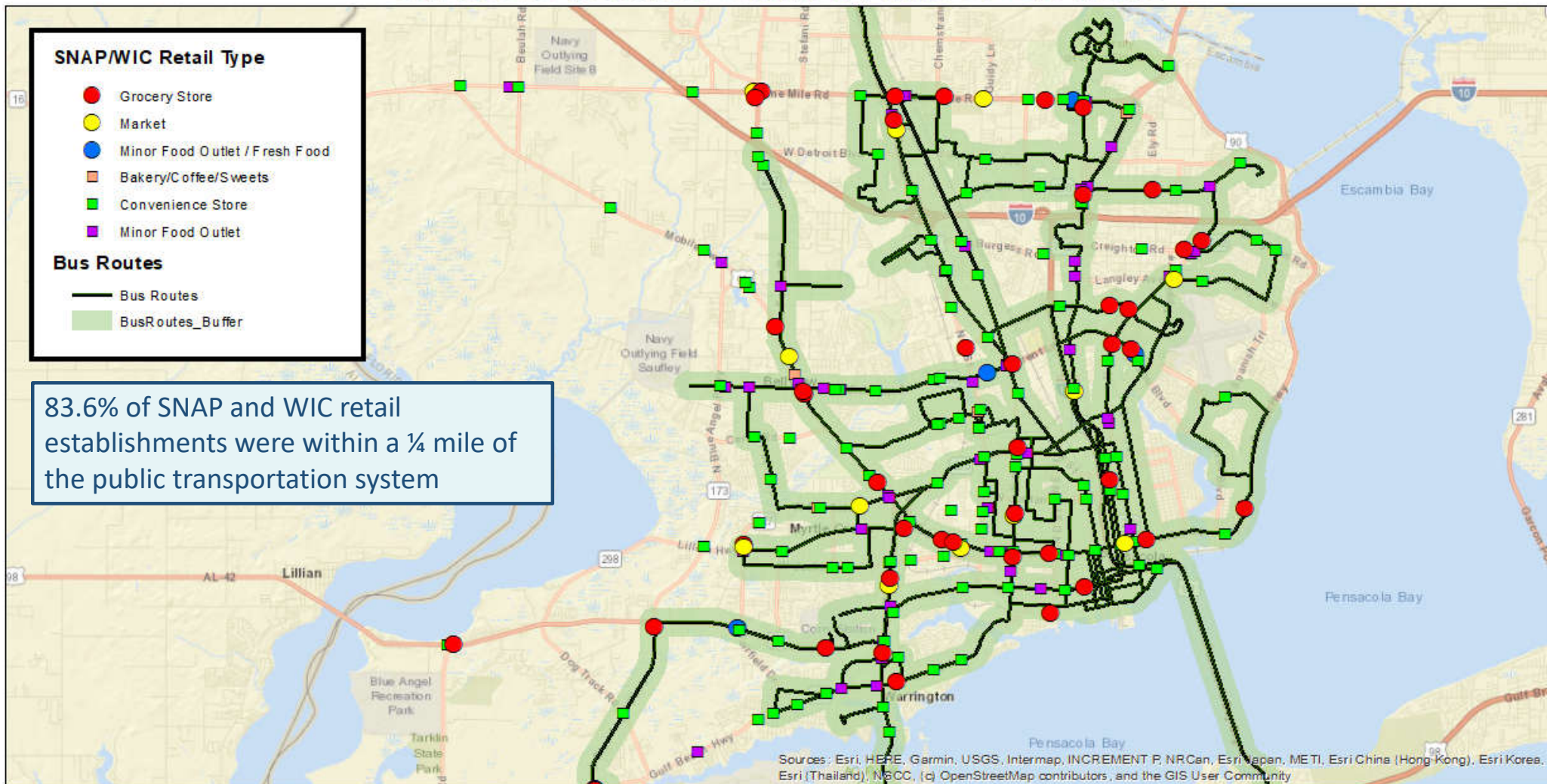
- 263 food retail establishments were SNAP/WIC approved retail establishments
 - Remember that all the establishments accepting WIC benefits also accepted SNAP benefits
- Of those approved retailers 83.6% were within $\frac{1}{4}$ mile of an ECAT bus route
 - Most retailers were convenience stores (46.4%) and minor food outlets (28.6%)
 - 16.3% of retailers were grocery stores

The next two slides are going to show the bus routes (dark green lines) and their $\frac{1}{4}$ mile buffer (light green shading surrounding the dark green lines). If the circle or square marker falls within the light green area then they are within $\frac{1}{4}$ mile of an ECAT bus route.

Fresh Food Retail within 1/4 Mile of Bus Route



SNAP/WIC Retailers within 1/4 Mile of Bus Route

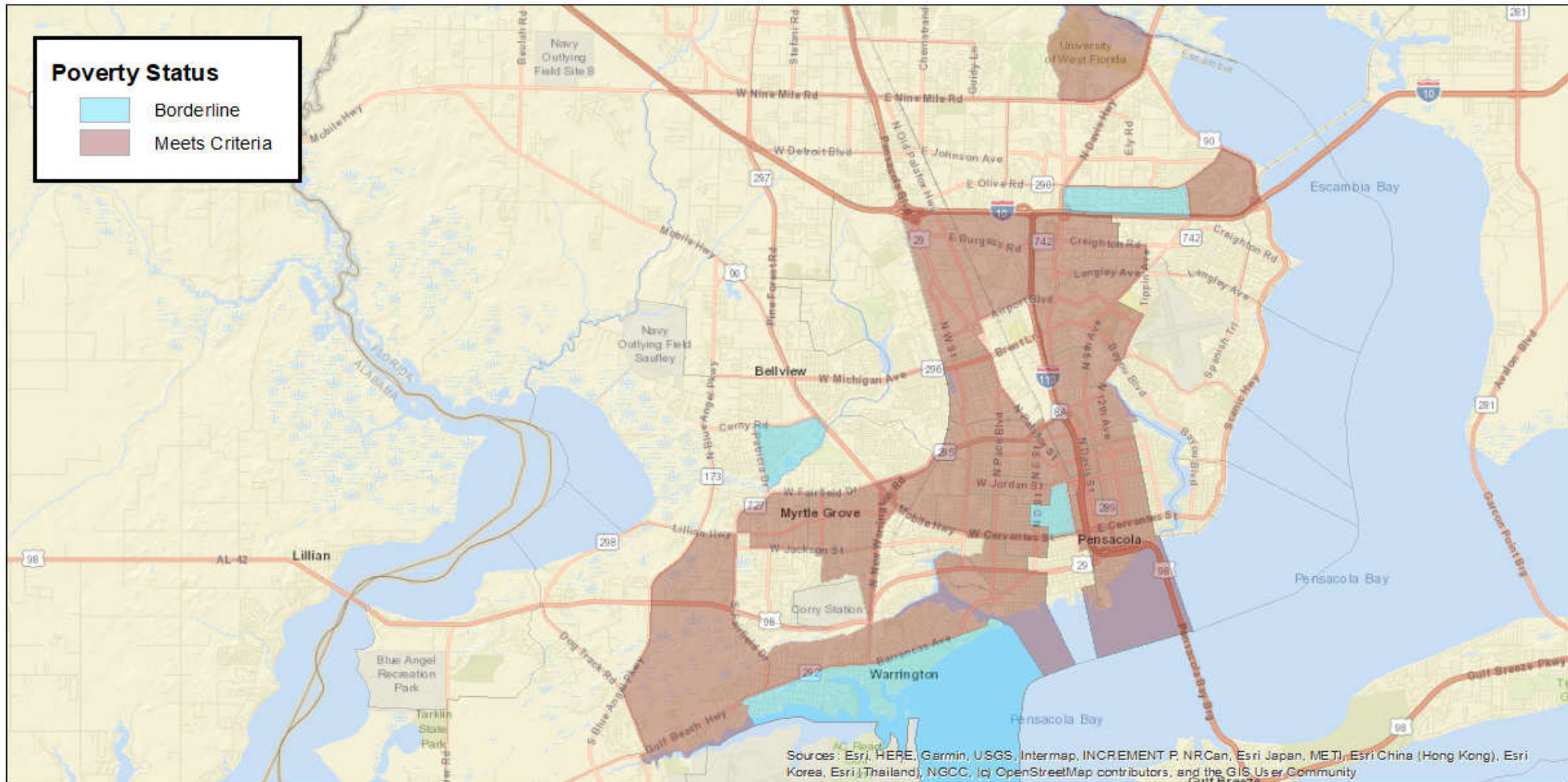


Results: Census Tract Poverty Status

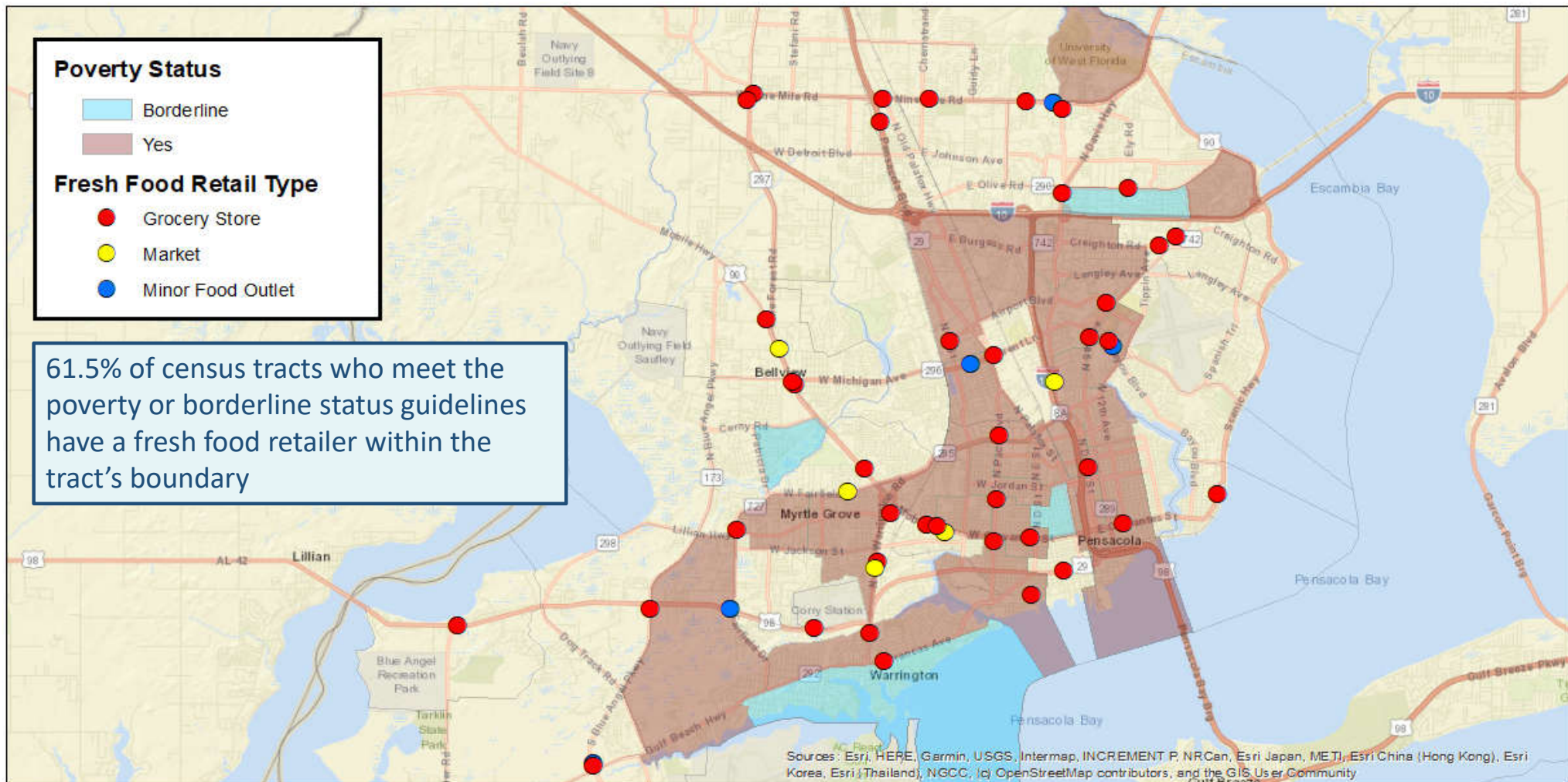
- The study area was made up of 63 census tracts
 - 34.9% of census tracts met the poverty requirements of a poverty rate of 20% or higher and/or a median family income less than 80% for the metro area
 - 6.4% of census tracts met the borderline requirements of a poverty rate between 20% and 23% and /or a median family income within 3,000 of the poverty cut off

The next slides are going to show the locations of those meeting the poverty requirements (dark red shading) and those that are a borderline status (light blue shading). There will also be maps showing the food retailers locations in relation to the census tracts meeting the poverty or borderline status guidelines

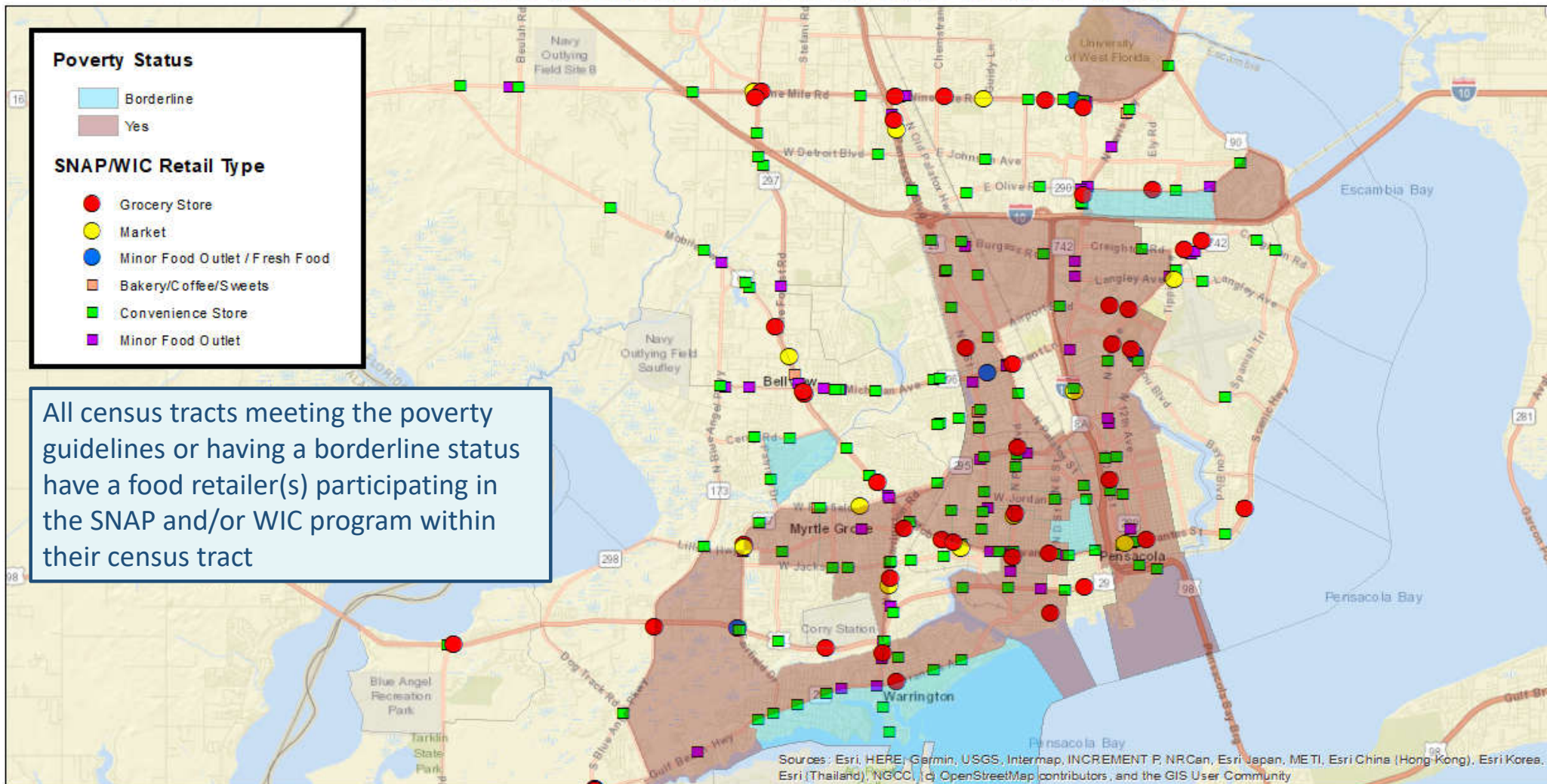
Low Income Census Tracts in Pensacola, FL



Fresh Food Availability for Low Income Census Tracts



SNAP/WIC Retailers for Low Income Census Tracts

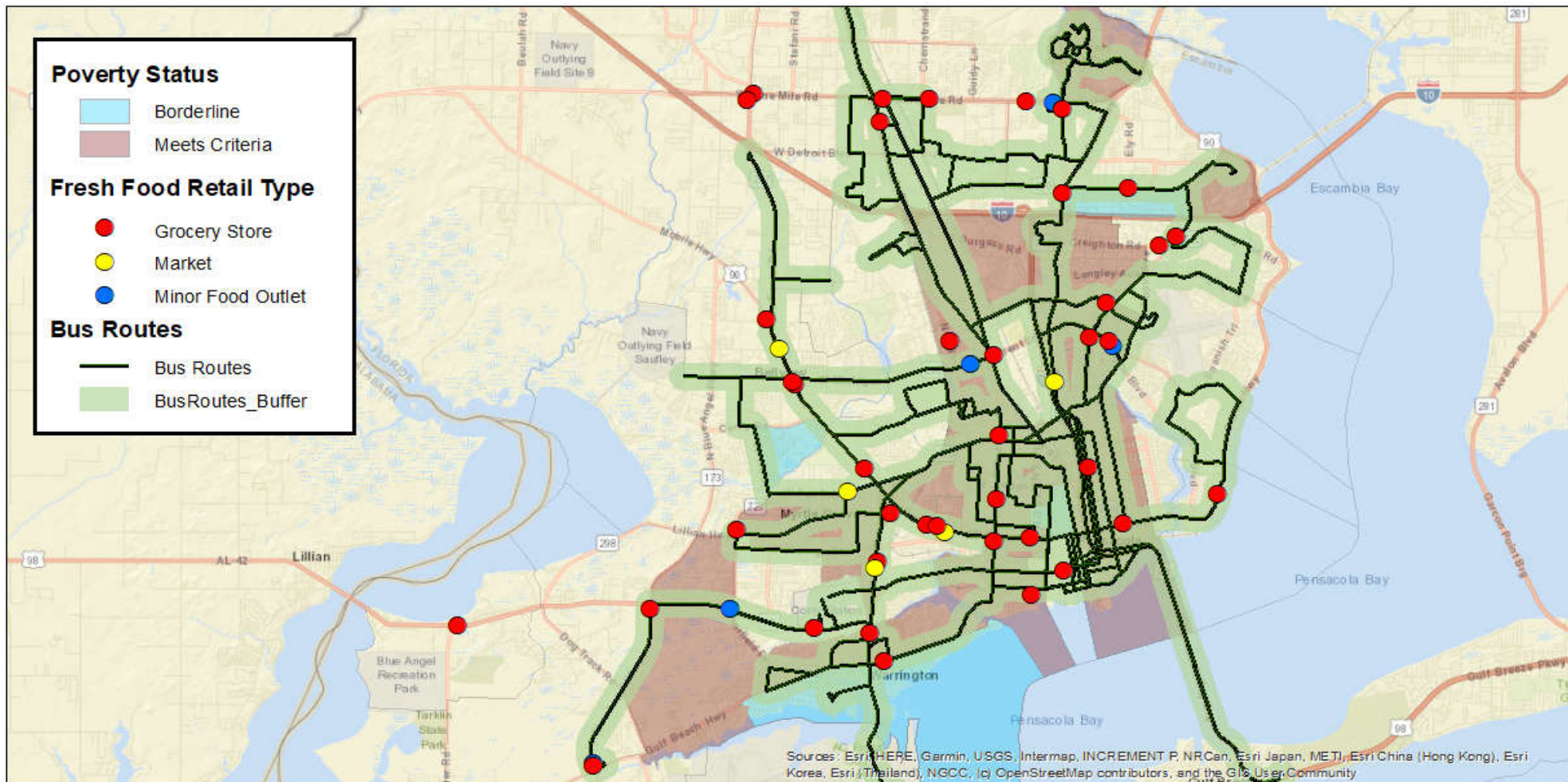


Results: Census Tract Poverty Status

- 263 food retail establishments were SNAP/WIC approved retail establishments
 - Remember that all the establishments accepting WIC benefits also accepted SNAP benefits
- Of those approved retailers 47.9% were within the border of a census tract meeting the poverty or borderline status guidelines
 - Most retailers most were convenience stores (48.4%) and minor food outlets (31.7%)
 - 15.9% of retailers were grocery stores

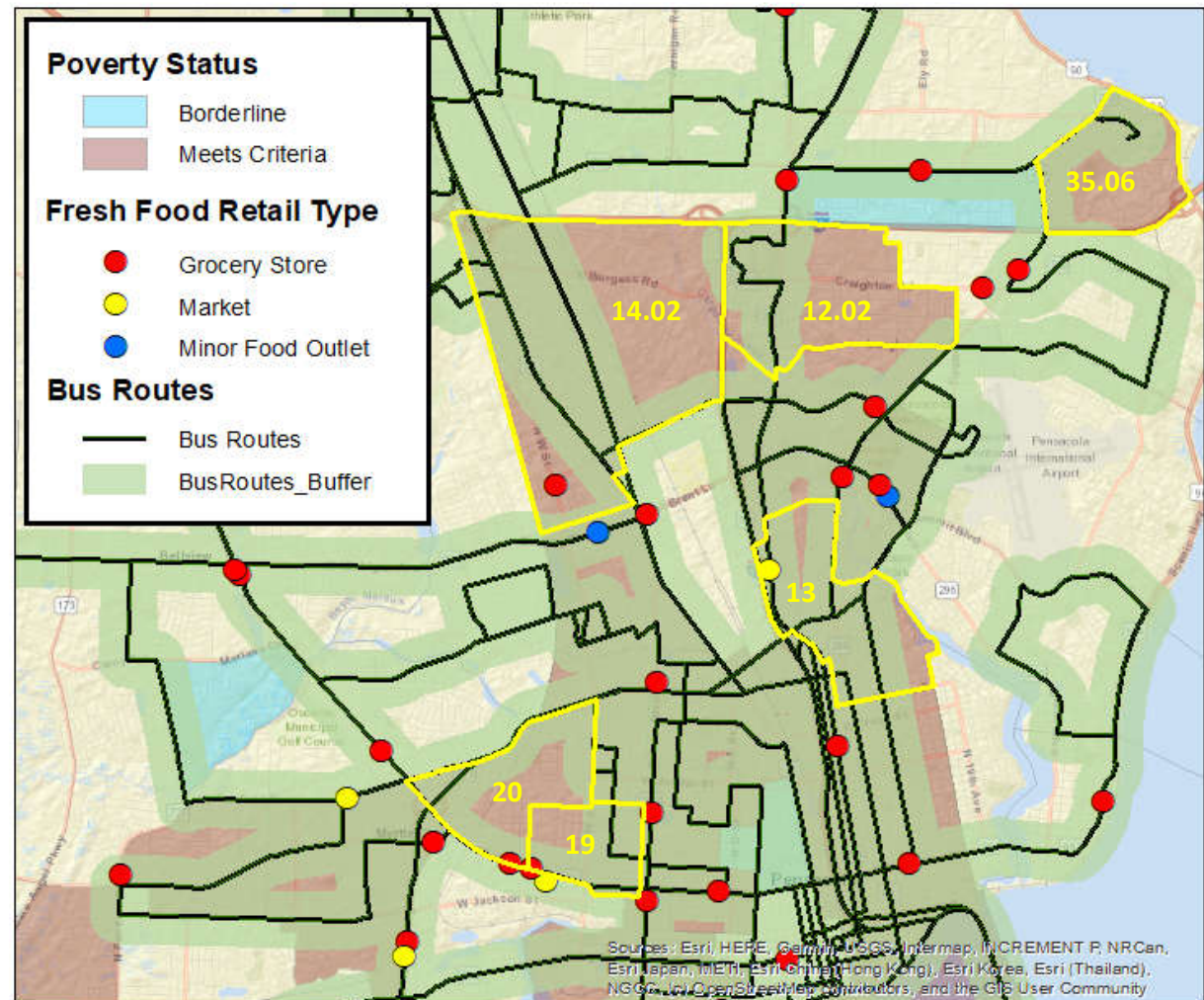
The next slides is going to show the locations of those meeting the poverty or borderline status guidelines, fresh food retailers locations, and ECAT bus routes with their ¼ mile buffer zone. Remember that we are trying to determine low income areas that may have trouble getting fresh food items.

Fresh Food Retail / Poverty Status within 1/4 Mile of Bus Route



- These highlighted census tracts were identified as potential areas of concern with regard to transportation to fresh food.
- We wanted to understand the demographics of these tracts.
- That information is broken down on the next few slides.

Census Tracts of Interest

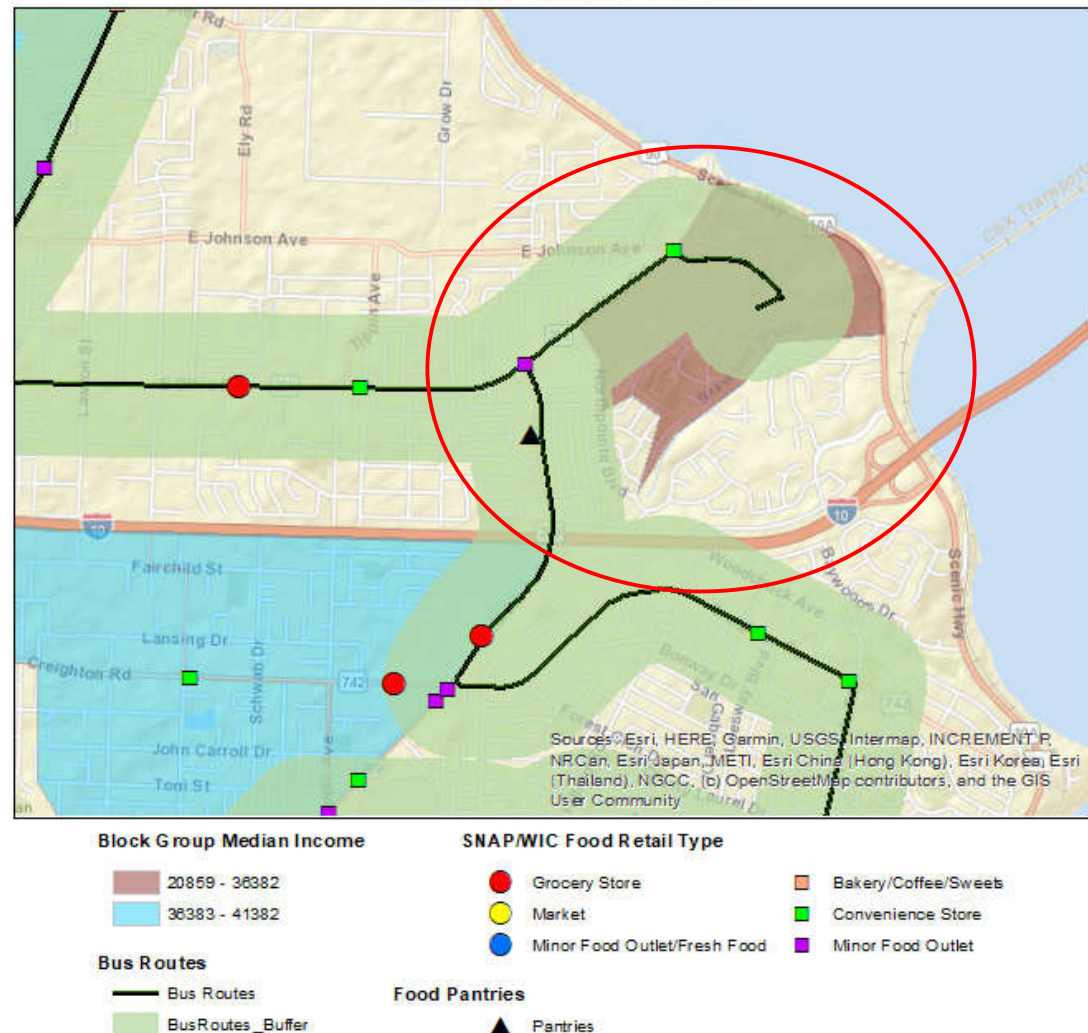


Census Tract Information

- Age
 - Median Age – 32.2
 - % 65 and older – 12.8
 - Old Age Dependency Ratio – 22.5
 - Child Dependency Ratio – 53.8
- Race
 - White Alone – 3142
 - Black or African American – 981
 - Other Race – 1106
- Housing
 - % Owner Occupied – 56.5
 - % Renter Occupied – 43.5
 - % Housing Unit with No Vehicle – 8.2 ←
- Income
 - Median Income – 44,911 ←
 - Percent Poverty – 22.9 ←

For these next slides we wanted to make note of the % with no vehicle access, Median income, and % poverty for comparing the different census tracts that were identified.

Census Tract 35.06

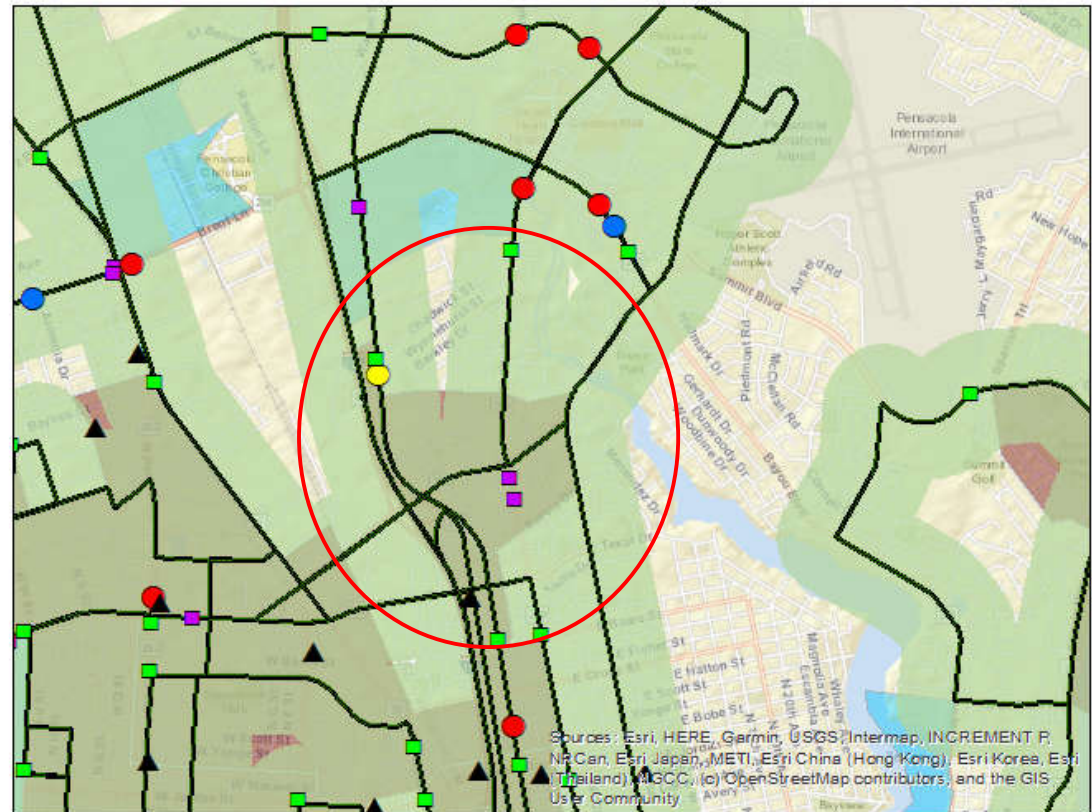


Census Tract Information

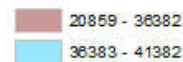
- Age
 - Median Age – 28.5
 - % 65 and older – 14.6
 - Old Age Dependency Ratio – 27.8
 - Child Dependency Ratio – 62.2
- Race
 - White Alone – 1379
 - Black or African American – 3263
 - Other Race – 349
- Housing
 - % Owner Occupied – 56.9
 - % Renter Occupied – 43.1
 - % Housing Unit with No Vehicle – 13.4
- Income
 - Median Income – 34,922
 - Percent Poverty – 36.3

Census tract 13 is of special interest because it: is identified by USDA as a Food Desert / has 'adequate' coverage with bus routes / has higher rates of death due to disease

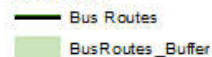
Census Tract 13



Block Group Median Income



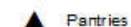
Bus Routes



SNAP/WIC Food Retail Type



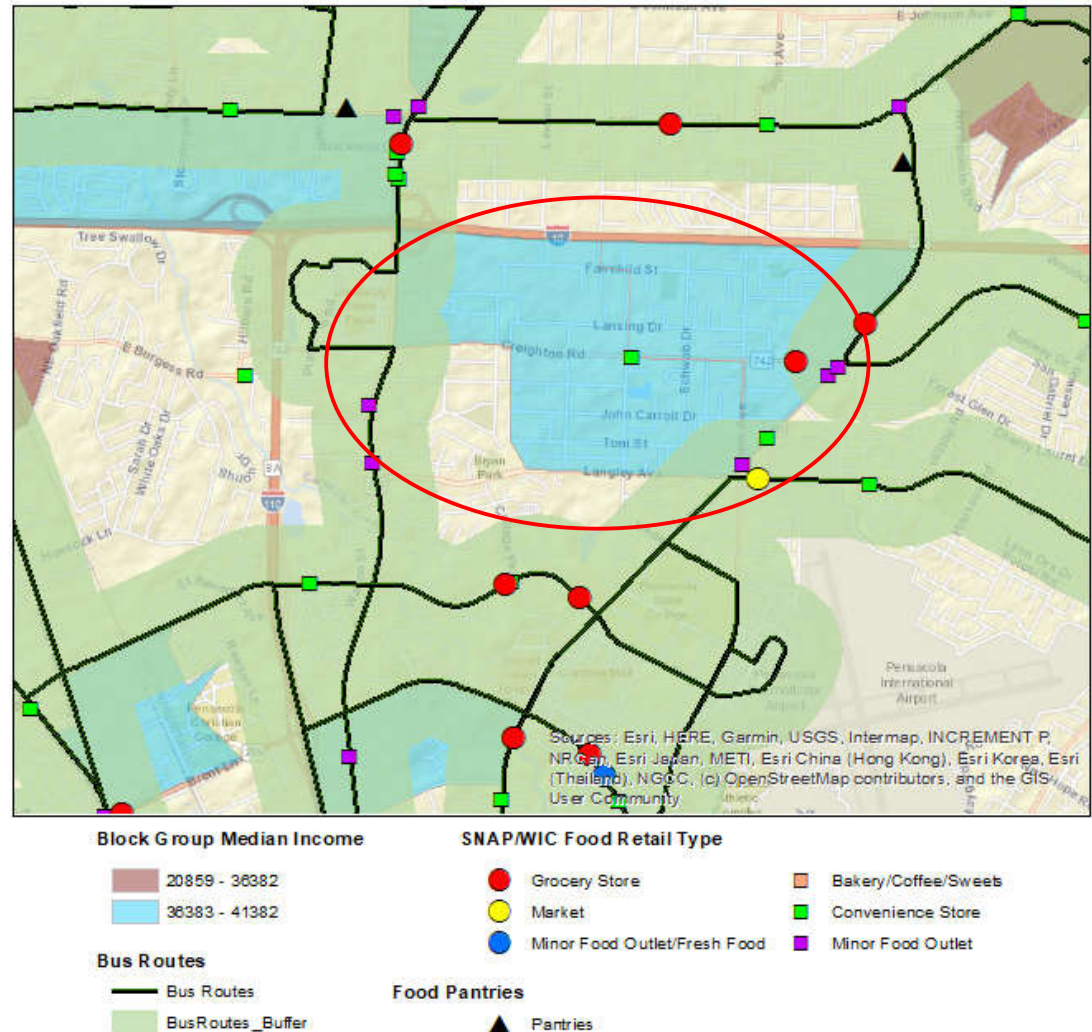
Food Pantries



Census Tract Information

- Age
 - Median Age – 27.9
 - % 65 and older – 10.8
 - Old Age Dependency Ratio – 18
 - Child Dependency Ratio – 49.3
- Race
 - White Alone – 3208
 - Black or African American – 924
 - Other Race – 693
- Housing
 - % Owner Occupied – 39.4
 - % Renter Occupied – 60.6
 - % Housing Unit with No Vehicle – 5.6
- Income
 - Median Income – 34,890
 - Percent Poverty – 23.5

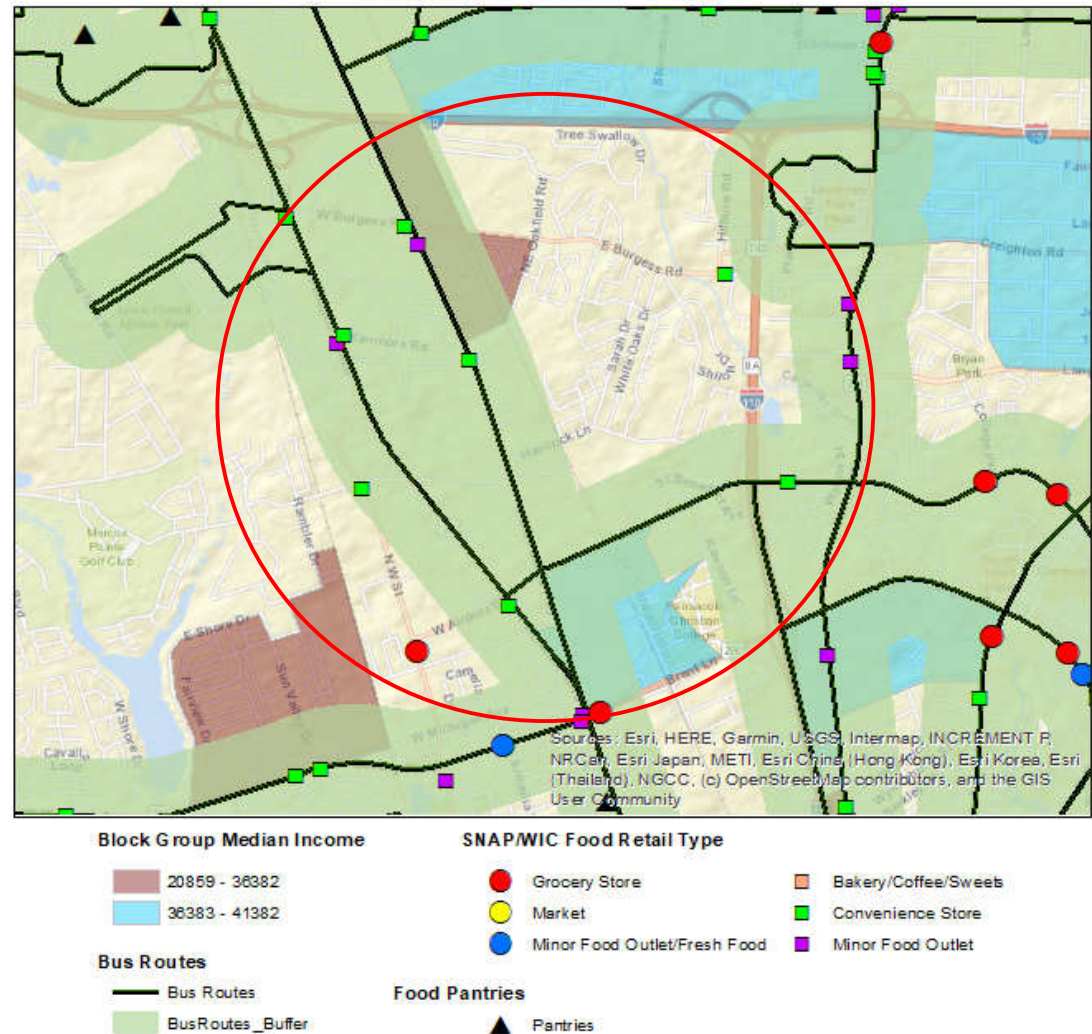
Census Tract 12.02



Census Tract Information

- Age
 - Median Age – 34.2
 - % 65 and older – 15.8
 - Old Age Dependency Ratio – 25.9
 - Child Dependency Ratio – 37.5
- Race
 - White Alone – 3925
 - Black or African American – 2771
 - Other Race – 896
- Housing
 - % Owner Occupied – 54
 - % Renter Occupied – 46
 - % Housing Unit with No Vehicle – 11
- Income
 - Median Income – 41,427
 - Percent Poverty – 22

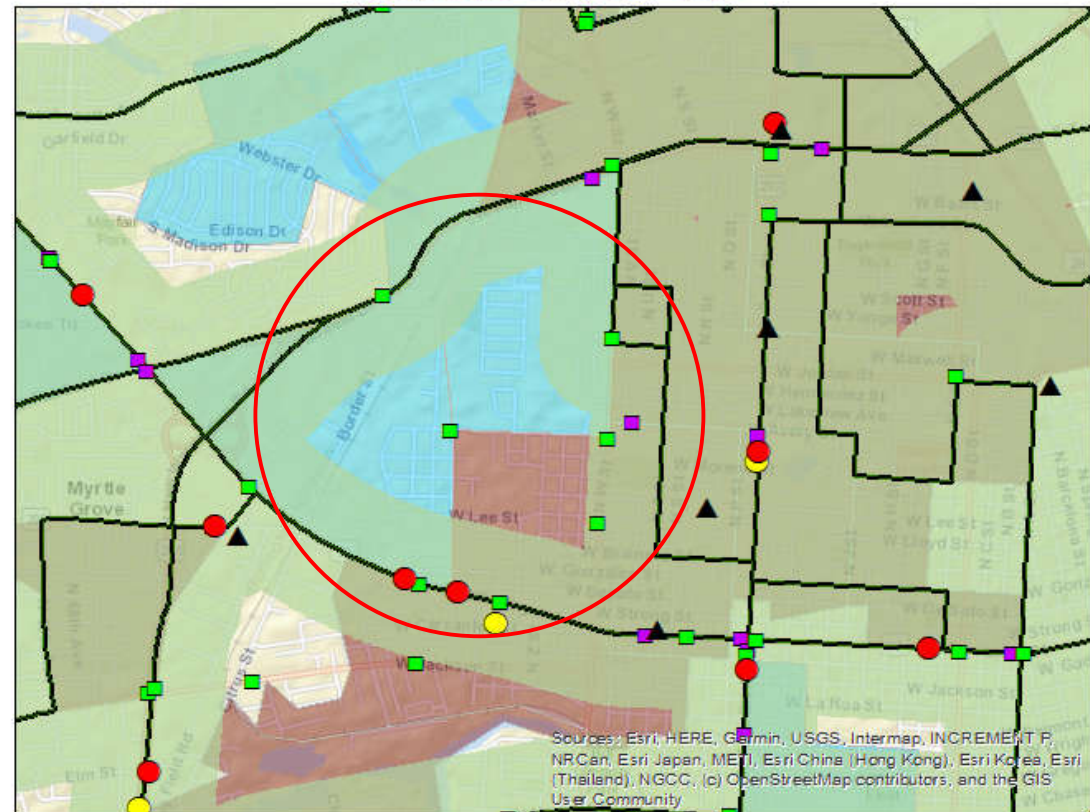
Census Tract 14.02



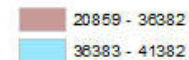
Census Tract Information

- Age
 - Median Age – 36.5 / 44.7
 - % 65 and older – 14.4 / 25.2
 - Old Age Dependency Ratio – 22.5 / 45.1
 - Child Dependency Ratio – 33.4 / 34.2
- Race
 - White Alone – 863 / 905
 - Black or African American – 965 / 861
 - Other Race – 175 / 178
- Housing
 - % Owner Occupied – 51.5 / 34.9
 - % Renter Occupied – 48.5 / 65.1
 - % Housing Unit with No Vehicle – 12.4 / 10.2
- Income
 - Median Income – 24,322 / 32,004
 - Percent Poverty – 35.5 / 18.2

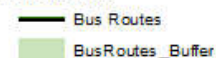
Census Tract 19/20



Block Group Median Income



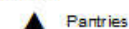
Bus Routes



SNAP/WIC Food Retail Type



Food Pantries



Results: Disease Death Rates

- Data from previous slides related to poverty status indicated that there are 63 census tracts in the study area.
- 58.7% of census tracts did not meet the poverty guidelines, 6.4% were borderline status, and 34.9% met the poverty guidelines.

The death rate is the number of people per 100,000 that die of a disease in a particular area (census tract) over a defined time period (2014-2018). The death rates are provided by the Department of Health's FLHealthCHARTS. It is important to remember the above percentages when examining the death rates on the next slide. You may notice that there is not much difference in the rates of death between the 58.7% of census tracts who did not meet the poverty guidelines and the 34.9% of census tracts that did meet the poverty guidelines.

Disease death rates of non-poverty census tracts versus census tracts meeting poverty guidelines and borderline status

	Disease Death Rate (deaths per 100,000)				
	Heart Disease	Hypertension	Diabetes	Nutritional Related Disease	Cardio Disease
Census Tract Poverty Status					
Did Not Meet Poverty Requirements	6827.79	430.00	1072.19	68.20	7413.69
Borderline Poverty	883.50	62..39	130.20	4.09	858.89
Met Poverty Requirements	5888.90	334.70	870.89	59.39	5018.20

Source: American Community Survey, FLHealthCHARTS

Disease death rates of highlighted census tracts

Disease Death Rate (deaths per 100,000)					
	Heart Disease	Hypertension	Diabetes	Nutritional Related Disease	Cardio Disease
Highlighted Tracts					
12.02	217.00	14.50	43.04	0	135.00
13	335.70	28.00	60.59	4.69	261.10
14.02	225.89	20.50	26.39	0	208.30
19	217.50	20.70	51.79	10.39	279.70
20	250.89	27.89	83.59	0	315.89
35.06	191.80	0	13.69	4.59	260.29

Highlighted rates in orange were above the average calculated death rate

Conclusion

- This study did show that outside factors such as bus routes and smaller local grocery stores did have an impact on some low income census tracts with limited access to food retailers
- Census tracts meeting the poverty requirements of the study did have higher death rates of disease especially those with limited access to food retailers
- This study provides a starting point for discussions and collaborations with other health professionals and stakeholders in the community
- It is important that the needs of the community are examined to determine the most beneficial next step
- Results should be shared with ECAT in hopes to address areas of limited access

References

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